

Bootable Media

LEARNING OBJECTIVES:

After reading this INFORMATION SHEET, YOU MUST be able to:

1. Identify the essential factor of different boot devices.
2. Create and configure installer using flash drive and/or different form of storage devices.

INTRODUCTION

Boot is to load the first piece of software that starts a computer. Because the operating system is essential for running all other programs, it is usually the first piece of software loaded during the boot process.

Storage Media is a device for recording (storing) information (data).

Bootable Media/ Bootable Device is physical media (CD, DVD, USB flash drive or other removable media supported by a machine BIOS as a boot device) that boots on any PC-compatible machine.

Bootable media is most often used to:

- recover an operating system that cannot start
- access and back up the data that has survived in a corrupted system
- back up sector-by-sector a disk with an unsupported file system
- hardware or software troubleshooting

The process of booting

The term boot comes from the idea of lifting oneself by one's own **bootstraps**: the computer contains a tiny program (bootstrap loader) which will load and run a program found on a boot device.

Warm Boot vs. Cold Boot

- **Cold Boot**

To perform a cold boot (also called a "**hard boot**") means to start up a computer that is turned off. It is typically performed by pressing the power button on the computer.

- **Warm Boot**

To perform warm boot (also called a "soft boot") means to restart a computer. It is typically initiated from the operating system, rather than pressing a button on the computer itself.

For example, to perform a warm boot on a Windows system, you may select Shut Down → Restart from the Start Menu. If you use a Mac, you can perform a warm boot by selecting Restart... from the Apple Menu

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CREATE WINDOWS INSTALLER USING FLASH DRIVE

Small portable computing devices such as Netbooks and MIDs (Mobile Internet Devices) offer great mobility, but they lack optical drives (CD/DVD). An optical drive is important when you need to install software from a CD or DVD. An external optical drive would work, but you may not want to lug it around with you. So what's the solution? Use a USB flash drive as a bootable installation media.

What You Need:

1. A USB flash drive with good storage capacity; preferably 4GB or more.
2. Access to a computer running Windows Vista or Windows 7.
3. A CD or DVD containing software you want to download.

Procedure

1. Click Start > All Programs > Accessories > Right click on Command Prompt > Run as Administrator.

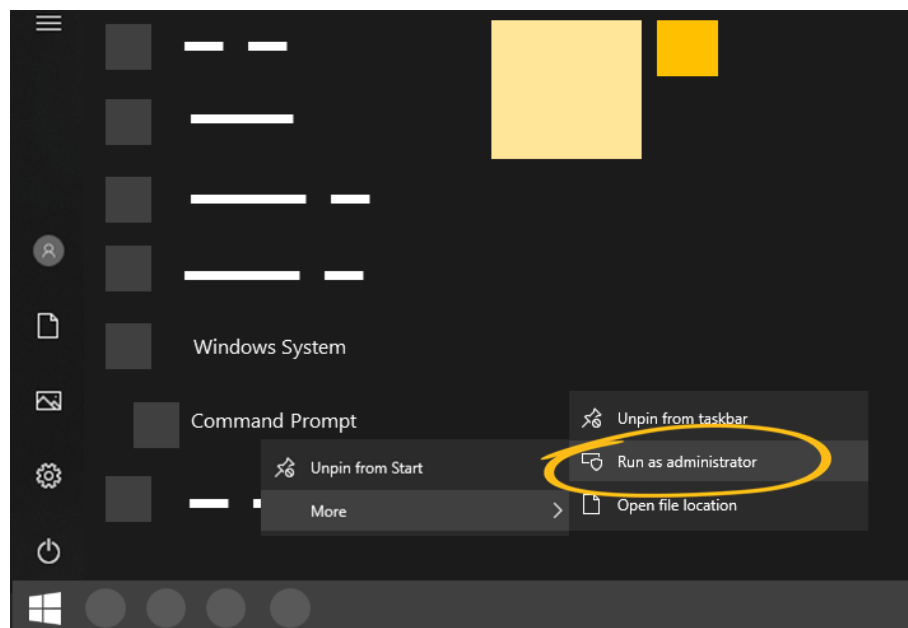


Figure 2.5 **Running CMD with Administrative privilege**

2. Type 'diskpart' and press Enter to start the built in Windows disk partitioning utility

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Figure 2.6 **Starting diskpart partitioning utility**

3. Type 'list disk' and press Enter. Identify your USB Flash drive and make a note of the disk number. Here in this example, My USB flash drive is Disk 4.

Note: Careful about choosing correct disk index number, failure to select right disk may result to permanent deletion of data that may lead to catastrophic event.

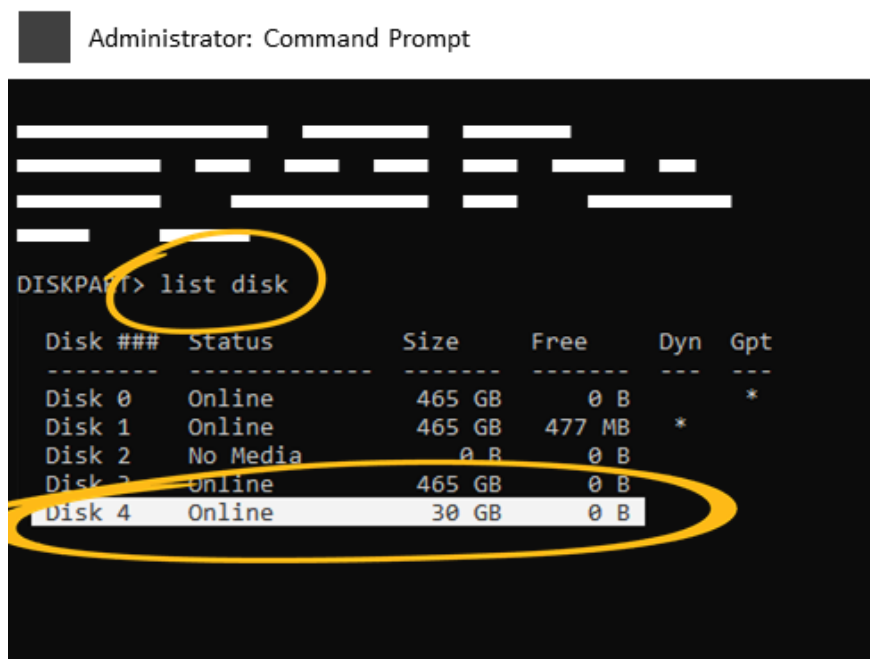
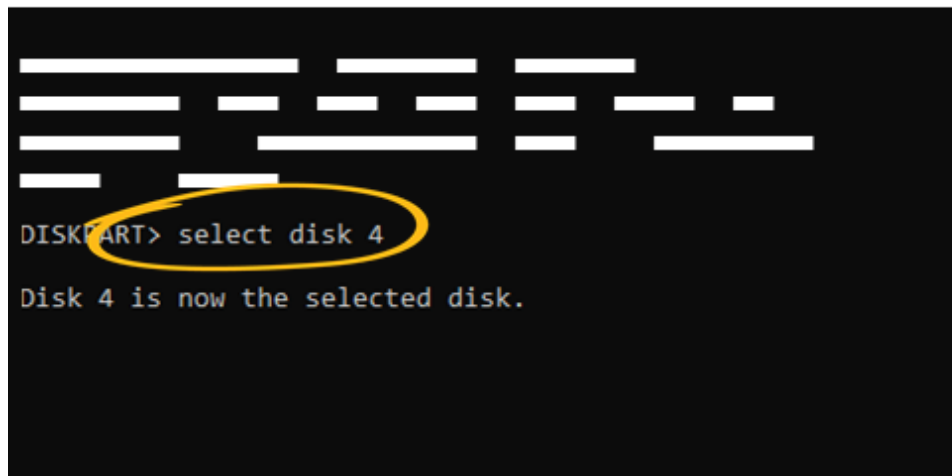


Figure 2.7 **Listing available disk**

4. Type 'select disk 4' and press Enter.

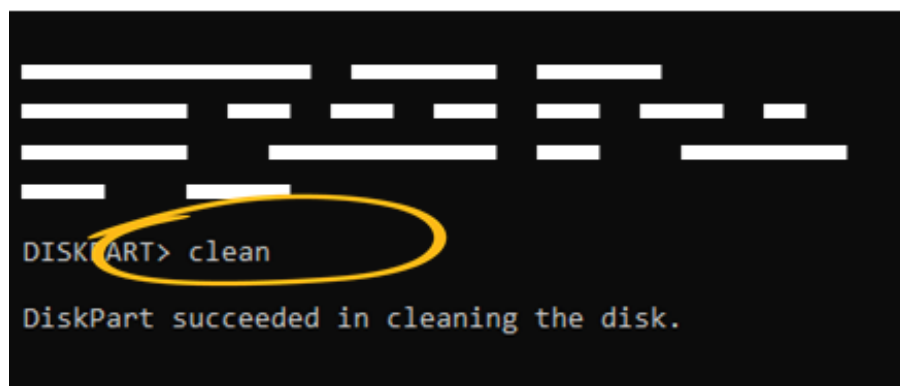


```

DISKPART> select disk 4
Disk 4 is now the selected disk.
  
```

Figure 2.8 **Running CMD with Administrative privilege**

5. Type 'clean' and press Enter. The clean command will remove partitions or volume formatting from the selected disk (disk 1) by zeroing sectors.



```

DISKPART> clean
DiskPart succeeded in cleaning the disk.
  
```

Figure 2.9 **clean Command**

6. Now to create a partition, type 'create partition primary' and press Enter.

```
Administrator: Command Prompt

DISKPART> create partition primary
DiskPart succeeded in creating the specified partition.
```

Figure 2.10 **Create primary partition**

7. Type 'select partition 1', and press the Enter key

```
Administrator: Command Prompt

DISKPART> select partition 1
Partition 1 is now the selected partition.
DISKPART>
```

Figure 2.11 **Select Partition**

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8. Type 'active', and hit the Enter Key.



Figure 2.12 **active selected partition**

Source: <http://www.support.com/>

9. To format the partition using FAT32 file system, type 'format fs=fat32' and press the Enter key.

Important

If your server platform supports Unified Extensible Firmware Interface (UEFI), you should format the USB flash drive as FAT32 rather than as NTFS. To format the partition as FAT32, type format fs=fat32 quick, and then click ENTER.

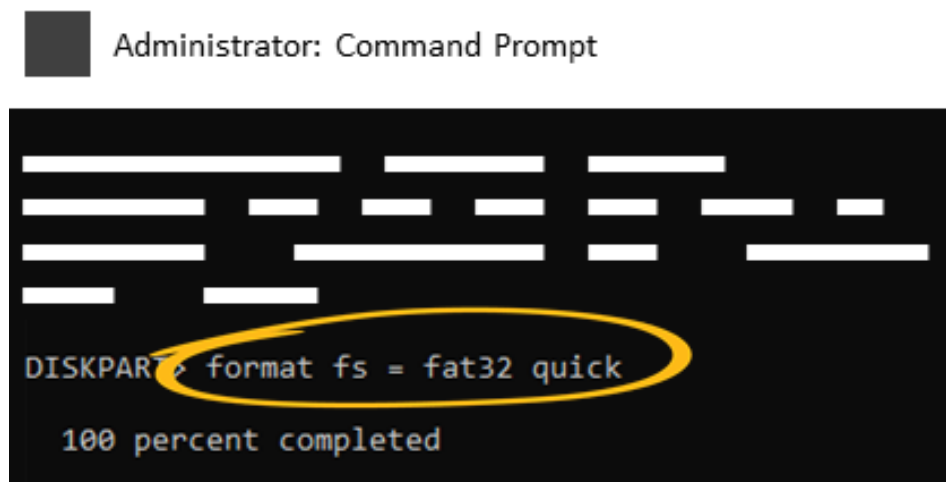


Figure 2.13 **format FAT32 file system**

10. Type 'assign' and press the Enter key to assign a drive letter to your USB flash drive. Type exit to exit the diskpart utility.

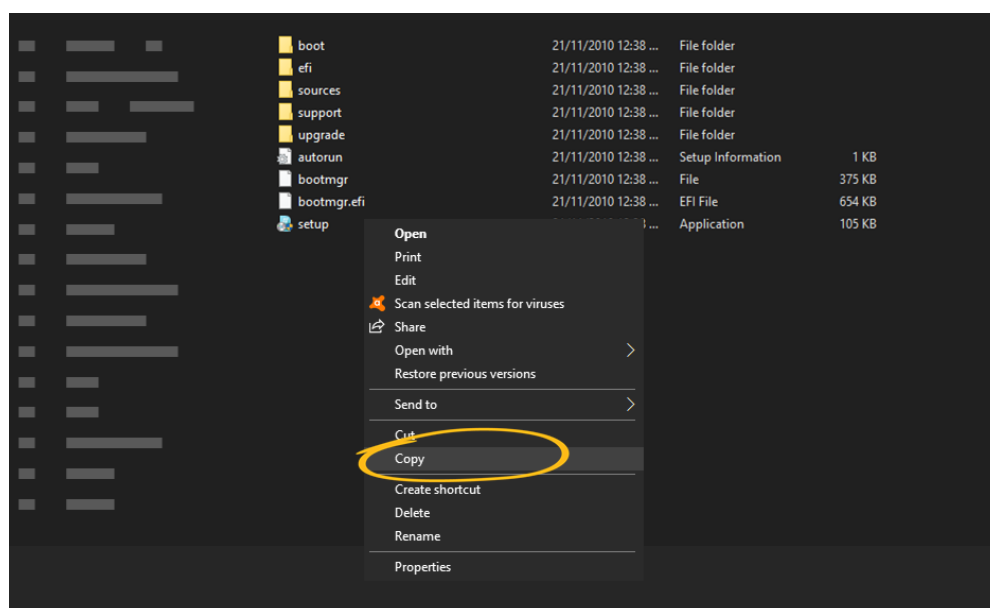
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Figure 2.14 **Assign driver letter**

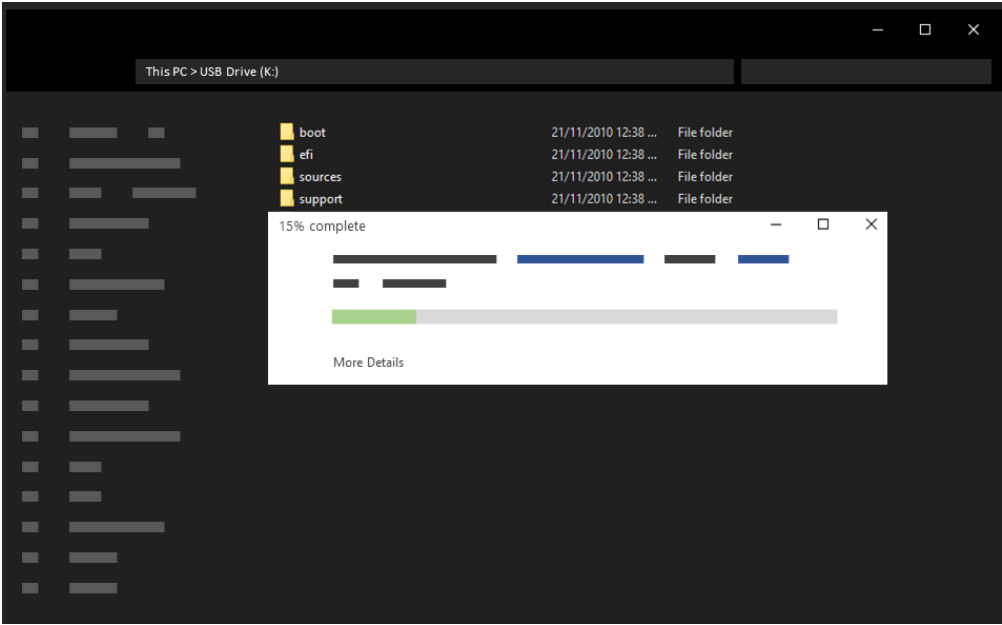
Your USB flash drive is now ready to be used as an installation media. All you need to do is copy the entire contents of the Operating System (DVD) to your newly prepared USB flash drive. Plug the USB flash drive to the computer and reboot to begin the installation.

11. Copy the data.



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12. Paste the data file into your flashdrive.



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SELF CHECK 1.2-2

Name:	
Date:	

Direction: Write the best answer. If you chose the wrong answer, don't fight for it, instead let go and moved on, or else you'll get hurt. Don't play with questionnaire, it did nothing to you. Answer according to your mind and heart's content and pray that this test will love you back. ☺

1. It is a device for recording (storing) information (data).

- a. Storage Media
- b. Operating system
- c. Boot
- d. Application

2. It is also called a "hard boot".

- a. Cold boot
- b. Warm Boot
- c. Storage Media
- d. Flash drive

3. It is also called a "soft boot".

- a. Cold boot
- b. Warm Boot
- c. Storage Media
- d. Flash drive

4. Bootable media is most often used to.

- a. recover an operating system that cannot start
- b. back up sector-by-sector a disk with an unsupported file system
- c. both A and B
- d. install antivirus

5. It pertains to any physical media (CD, DVD, USB flash drive or other removable media supported by a machine BIOS as a boot device) that boots on any PC-compatible.

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- a. Bootable devices
 - b. Operating system
 - c. both A and B
 - d. application software
- 6. Means to start up a computer that is turned off. It is typically performed by pressing the power button on the computer.**
- a. Cold Boot
 - b. Warm Boot
 - c. bootstraps
 - d. bootable disc.
- 7. Means to restart a computer. It is typically initiated from the operating system, rather than pressing a button on the computer itself.**
- a. bootstraps
 - b. Cold Boot
 - c. bootable disc.
 - d. Warm Boot
- 8. Is to load the first piece of software that starts a computer.**
- a. application software
 - b. bootstraps
 - c. boot
 - d. Flash drive
- 9. Is physical media (CD, DVD, USB flash drive or other removable media supported by a machine BIOS as a boot device) that boots on any PC-compatible machine.**
- a. Flash drive
 - b. Bootable Media
 - c. Storage Media
- 10. It pertains to load the first piece of software that starts a computer**
- a. Boot
 - b. Operating system
 - c. Storage Media
 - d. bootstraps

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ANSWER KEY 1.2-2

1. A
2. A
3. B
4. C
5. A
6. A
7. D
8. C
9. B
10. A

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TASK SHEET 1.2-2

Title: Create Bootable Media

Performance Objective: Given are the following materials, you should be able to create bootable media using different bootable devices. Allotted time 5 hours.

Supplies/Materials : Operating System, Storage Devices such as Optical Disc and Flash Drive

Equipment : Computer with Optical Disc Drive (ODD)

Steps/Procedure:

A. Using Flash Drive/Flash Disk

1. Click Start > All Programs > Accessories > Right click on Command Prompt > Run as Administrator.

1. Type '**diskpart**' and press Enter to start the built in Windows disk partitioning utility

2. Type '**list disk**' and press Enter. Identify your USB Flash drive and make a note of the disk number. Here in this example, My USB flash drive is Disk

3. Type '**select disk 1**' and press Enter.

4. Type 'clean' and press Enter. The clean command will remove partitions or volume formatting from the selected disk (disk 1) by zeroing sectors.

5. Now to create a partition, type '**create partition primary**' and press Enter.

6. Type '**select partition 1**', and press the Enter key

7. Type '**active**', and hit the Enter Key.

8. To format the partition using FAT32 file system, type '**format fs=fat32**' and press the Enter key

9. Type '**assign**' and press the Enter key to assign a drive letter to your USB flash drive. Type exit to exit the diskpart utility.

10. Insert your DVD contains your OS files then copy to your configured flash drive or extract the (iso files) from a folder.

Requirements:

Trainees must be able to create the following

- a. Bootable windows 7
- b. Bootable windows 10
- c. Bootable windows server

Assessment Method:

Demonstration, Observation

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Performance Criteria Checklist 1.2-2

Trainee's Name: _____ **Date:** _____

During the performance of the task, did you consider the following criteria?

CRITERIA	YES	Grade Equivalent	Point	NO
		Highest Score = 5	Possible	
Did the trainee...		Lowest Score = 0	Possible	
1. Properly configured windows 7 bootable OS				
2. Properly configured windows 10 OS				
3. Successfully configured windows Server OS				
4. Performed and followed completely the given tasks?				

Total Points	
Total Items	

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Signature of the Trainee/Learner	
Signature of the Trainer	

Grade Point Equivalent

The table shows the equivalent points that are used and show how they are calculated to determine the grade point average (GPA), or index.

The highest equivalent points that trainer can give is 5 points per criterion and the lowest is 0. If the trainee/learner accumulate scores with below two (2) *grade point equivalent*, she/he needs to retake the whole given task.

Grade Point Equivalent	Explanation
5	Excellent
4	Very Good
3	Good
2	Average
1	Poor
0	Failure

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